REMARKS/ARGUMENTS

The Applicant respectfully requests further examination and reconsideration in view of the comments set forth fully below. Claims 1-3, 5, 8, 9, and 37-39 were pending. Within the Office Action, Claims 1-3, 8, 9, and 37-38 have been rejected. Accordingly, Claims 1-3, 5, 8, 9, and 37-39 are now pending in the application.

Rejections Under 35 U.S.C. § 112:

Within the Office Action, Claim 5 has been rejected under 35 U.S.C. § 112 as failing to provide sufficient antecedent basis for the limitation of "the switch." By the above amendment, applicants have respectfully overcome this rejection.

Rejections Under 35 U.S.C. § 103:

Within the Office action, Claims 1-3, 8, 9, and 37-39 have been rejected as being unpatentable over US Patent Application No. 2004/0116096 to Shen (Hereinafter Shen) in view of US Patent No. 5,543,756 to Anderson (Hereinafter Anderson) and in view of US Patent No. 7,034,660 to Watters (Hereinafter Watters).

Shen teaches an RF communications receiver which permits greater integration on standard silicon chips and consumes less power than previous receivers. Also, Shen teaches a new method for using a tracking polyphase filter for image rejection of variable intermediate frequencies, wherein the method allows for reduce sensitivity to resistor and capacitor manufacturing variations and allows for the polyphase filter response to be enhanced compared to the prior art. [Shen, Abstract]

Anderson teaches a circuit for an intermediate frequency filter combines a variable bandwidth series resonant filter circuit and a parallel resonant filter circuit. A variable output impedance drives the filter and a variable input impedance amplifier buffers the output of the filter. The output impedance of the driver is made to track the input impedance of the output buffer. Changes in the gain of the filter with respect to bandwidth are relatively small. The noise figure of the filter remains low. The circuit is not operated in the non-linear region of the crystal because relatively low drive currents are needed at narrow bandwidths so that the crystal is not overdriven. The LC filter tunes out the stray capacitance from the load of the crystal filter. [Anderson, Abstract]

Watters teaches devices for structural health monitoring including wireless interrogation systems and methods that rely on a complementary sensing device and interrogator. The sensing device is disposed to measure a parameter indicative of the health of a structure. A sensor reading

from the sensor indicates the level of a parameter being monitored or whether one or more particular physical or chemical events have taken place. Using wireless techniques, the interrogator probes the device to determine its identity and its current sensor reading. This often includes transmission of a wireless signal through portions of the structure. When activated, the device responds with a wireless signal that identifies the device and contains information about the parameter being measured or a particular sensor state corresponding to the parameter. The identity of the device allows it to be distinguished from a number of similar devices. Thus this invention finds particular usefulness in the context of an array of devices that can be probed by a wireless interrogation unit. [Watters, Abstract]

The Combination of Shen, Andersen and Watters do not teach all limitations of the Claims

Neither Shen, Andersen, Watters, or their combination teach a filter for use in an integrated circuit comprising a plurality of data storage locations programmable through a serial control interface.

The instant Claim 1 is directed towards an intermediate frequency filter for use in an integrated circuit, comprising a first filter stage, the first filter stage including a first LC resonator, and the first filter stage further including a first adjustable capacitor array coupled to the first LC resonator, the first adjustable capacitor array having an effective capacitance value adjustable through use of a first plurality of programmable data storage locations, the first plurality of programmable data storage locations programmable through a serial control interface. As discussed above, neither Shen, Andersen, Watters or their combination teach a plurality of programmable data storage locations. Within the office action, the Examiner points to paragraphs 0028 and 0029 of Shen to show a plurality of data storage locations programmable through a serial control interface. Paragraphs 0028 and 0029 read:

> "FIG. 5 is a possible implementation of the switched capacitor array. Terminals 109 and 110 are connected to a binary-weighted switched capacitor array. Capacitors 111-113 are connected to switches 114-117, which can be programmed by digital control." [Shen, 0028]
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> "FIG. 7 is a possible implementation of a parallel switched resistor array. Terminals 130 and 131 are connected to a binary-weighted switched resistor array. Resistors 132-134 are connected to switches 135-138, which can be programmed by digital control." [Sen, 0030]

There is no mention of a plurality of programmable data storage locations. Filters that are

externally programmable are comprehended as prior art in the instant application:

> "Alternatively, in some embodiments, fuses 434 and 436 may be substituted for some other form of programmable storage location, such as an EEPROM cell, EPROM cell, ROM cell, flip-flop, or bits of a register for example. Similarly, it may be appropriate to use an alternative form of storage location for fuses 418 through 426. Also, various embodiments of the switched capacitive arrays may utilize more or fewer capacitors and associated transistors, allowing for different tuning resolutions and design requirements, and requiring a different number of control lines. Furthermore, note that in some embodiments, a lookup table of values may be used for purposes of programming one of the switched capacitive arrays, allowing for programming based on expected performance or characteristics of the overall system and for rapid programming responsive to predetermined conditions.
> "As previously described, IF filters are typically not integrated within an integrated tuner for various reasons. One reason is that tuning of the IF filter is usually necessary. Because the filter of the present invention solves the tuning problem, it can, therefore, be more readily integrated with a tuner." [Present Specification, Paragraphs 57-58]

It is well settled that to establish a *prima facie* case of obviousness, the prior art reference, or references, must teach or suggest all the claim limitations. [MPEP § 2143] The burden of establishing a *prima facie* case of obviousness based on the teachings of Shen, Anderson and Watters has not been met within the Office Action. As discussed above, the combined teachings of Shen, Anderson and Watters do not teach every element of Claim 1. Specifically, there is no teaching of a filter for use in an integrated circuit comprising a plurality of data storage locations programmable through a serial control interface. As a result, there can be no reasonable expectation of success by a person or ordinary skill in the art from the combination of Shen, Anderson and Watters since there is an element of the claim missing. As a result, Claim 1 is allowable over the combination of Shen, Anderson and Watters. Claims 2, 3 37 and 38 are dependent upon the allowable Claim 1, and are therefore also allowable.

The Combination of Shen, Anderson and Watters is Improper

The instant Claim 8 is directed towards a circuit formed as part of a single integrated circuit, the circuit comprising a first amplifier, a first oscillator, a first mixer coupled to the first amplifier and the first oscillator, a second oscillator, a second mixer coupled to the second oscillator, a second amplifier coupled to the second mixer, a serial control module, an

intermediate frequency filter (IF filter), the IF filter including a first filter stage, the first filter stage including a first LC resonator, the first filter stage further including a first adjustable capacitor array coupled to the first LC resonator, the first adjustable capacitor array having an effective capacitance value adjustable through use of a first plurality of fuses, the first plurality of fuses programmable through the serial control module, and wherein the second mixer is coupled to the IF filter and the IF filter is coupled to the first mixer.

It is well settled that to establish a *prima facie* case of obviousness, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings and there must be a reasonable expectation of success. [MPEP § 2143] The burden of establishing a *prima facie* case of obviousness based on the teachings of Shen, Anderson and Watters has not been met within the Office Action because the person of ordinary skill in the art has no motivation to combine Shen, Anderson and Watters. Shen and Andersen teach methods and apparatus relating to filters upon integrated circuits. Watters relates to monitoring the health of a large structure or portion thereof, such as a bridge, building, railroad track, aircraft, pipeline, tunnel, spacecraft, storage tanks, nuclear power plant, theme-park ride or road comprising metal or concrete. It cannot be argued that methods and apparatus relating to integrated circuits are analogous to methods and apparatus relating to monitoring of large concrete and metal structures. The person of ordinary skill in the art of integrated circuit design attempting to solve a problem relating to selection of capacitors in an integrated circuit would not have any motivation to search disclosures relating to structures of steel and concrete. Furthermore, the fuses discussed in Watters are external discrete components. Also, it is not clear how the combination of Shen, Anderson and Watters teaches the person of ordinarky skill how the fuses of Watters would be programmable through a serial control module of Shen.

Therefore, the Applicant respectfully argues that Claim 8 was not unpatentable as obvious over the combination of Shen, Anderson and Watters. Claim 9 is dependent on the allowable Claim 8, and is therefore also allowable.

The applicants respectfully submit that the above claims are in a condition for allowance, and allowance at an early date would be appreciated. If the Examiner has any questions or comments, the Examiner is encouraged to call the undersigned at (408) 530-9700 to discuss them so that any outstanding issues can be expeditiously resolved.

Respectfully submitted,
HAVERSTOCK & OWENS LLP

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By: /Thomas B. Haverstock/
Thomas B. Haverstock
Reg. No.: 32,571
Attorney for Applicants